Municipal Property Tax Assessment Financing

Removing Key Barriers to Residential Solar

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ABSTRACT: This paper outlines a new residential solar financeing option, and provides a policy primer on how to replicate the model in cities and towns across America. The financing mechanism, known as the Berkeley Financing Initiative for Renewable and Solar Technology (FIRST) model, allows property owners to roll the price of a residential solar installation into a 20-year increased property tax assessment. In this model a city or county authorizes municipal bonds to cover the capital costs of the renewable energy projects. The FIRST model represents a breakthrough in residential solar deployment by removing a key barrier to solar adoption: high upfront capital costs. This voluntary, opt-in property tax assessment model has the potential to dramatically increase the penetration of residential solar systems, helping municipalities achieve renewable energy generation and climate change goals. In this paper the benefits and challenges of the model, both to property owners and to municipalities, are explained. The paper concludes with a policy discussion of the steps needed to implement this financing tool in other jurisdictions.

Introduction

Innovations in the financing of solar systems are as important to market adoption of solar installations as innovations in solar technology. In this paper we explore a new financing method currently being deployed in Berkeley, California that will allow consumers to purchase solar for their homes and businesses with very little, if any, up-front capital cost. The Financing Initiative for Renewable and Solar Technology (FIRST) model has the potential to spur widespread adoption of small-scale solar systems (as well as energy efficiency retrofits) in U.S. homes and small businesses. The purpose of this paper is to describe this new finance tool, noting its benefits and potential pitfalls, and to provide policy makers with a primer for implementing this option in additional communities across America.

The Berkeley FIRST Model

In 2007, residential solar energy systems in Berkeley, California were selling for roughly $12,000 - $40,000 for a 2 -5kW system, and throughout the city approximately 400 solar photovoltaic (PV) systems, averaging 2.6 kW, had been installed on homes. Adoption of solar was progressing, but not at a pace fast enough to help Berkeley meet its voter-adopted climate change goal. City officials, led by Cisco DeVries, the then-Chief of Staff to Mayor Tom Bates, decided that the local government should intervene to speed up the shift to renewable sources of energy. What emerged was the Berkeley FIRST program.[1] "We needed to find a way to help people finance solar and energy efficiency programs in a way that eliminated the high upfront cost," said DeVries. [2] The FIRST program is a property-tax assessment program that allows property owners – both residential and commercial- to pay for the installation of solar systems (electric or thermal) and energy efficiency improvements to their buildings through their property tax bills, spanning a twenty-year duration.

Under the program, individuals wishing to install solar will still contract directly with qualified private solar installers. Rather than paying the up-front cost of the solar system, the customer will instead opt-in to the City's FIRST financing program and pay a bi-annual assessment bundled into their local property taxes that covers the project's costs, including fixed interest rates and administrative fees. Berkeley's analysis shows that for many residents, the yearly assessment will be less or equal to the electricity savings throughout the year.

The City of Berkeley will be able to provide the upfront funds for the solar and energy efficiency projects by issuing taxable municipal bonds, which will be reimbursed as participating property owners pay their tax bills for the subsequent 20 years. The basic principal of the program is that solar should be financed like most capital-intensive purchases these days – a new car, a major home repair – through long-term payment plans that alleviate much, if not all, of the up-front capital expense.

First Steps

Moving the program from concept to public policy required a few steps. First, the City needed to authorize the creation of "Sustainable Energy Financing Districts," which are essentially expanded "Special Improvement Districts" (*Districts*). In many states, special

[1] Berkeley FIRST Program Overview. City of Berkeley. 7 Oct. 2008. http://www.ci.berkeley.ca.us/ContentDisplay.aspx?id=22196.
[2] C. DeVries (personal communication, September, 2008).

districts are authorized as a means to finance projects that enhance the public good and promote the health, safety, prosperity, security, and general welfare of the community. For example, California has authorized the special tax financing district used by Berkeley since 1982. Typically *Districts* are created to direct eligible property tax funds towards payment of public services such as sanitary sewer projects, street beautification, off-street parking and park projects. The Berkeley City Counsel decided to expand on this concept to create a source of funding for sustainability projects that also benefited the public good. The "Sustainable Energy Financing Districts" concept was approved in November 2007, and directed the City's financial and legal consultants, along with members of UC Berkeley's Renewable and Appropriate Energy Laboratory (RAEL), to develop the details of what would become the Berkeley FIRST program.[3]

A team of city staff, bond counsel, and financial advisors, and a team of RAEL professors and students set to work, spending the next few months developing a blueprint for the financing program.[4] On April 22, 2008, the City Council approved a new ordinance creating the sustainability tax district. Further action to create the sustainability district and enable the bond financing took place on July 22, 2008.[5] On September 17, 2008 the City Council unanimously approved the complete financing program; first rolling out a $1.5 million, 40 home pilot program. The average homeowner participant will pay roughly $180 more per month on her property tax bill, before tax deductions, the majority of which will be recovered through savings on utility bills.

At the time of the vote, the City already had more than 100 property owners interested in participating in the program. If the pilot project is successful, the program budget will be expanded and could eventually reach tens of millions of dollars, allowing hundreds of property owners to sign up. In a sign of Berkeley's high hopes for the program, it authorized up to $80 million in total bond financing.

The Benefits

For property owners interested in going solar, the Berkeley FIRST model is a low-risk, high-benefit financial arrangement. The FIRST model overcomes a key financial barrier preventing property owners from going solar: lack of upfront capital. In addition, the incremental tax payments are fixed for 20 years at reasonable interest rates. Also, unlike

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[3] City of Berkeley. City Council Ordinance. *Creation of Sustainable Energy Financing District* " November 6, 2007. <http://www.ci.berkeley.ca.us/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/2008-07-22_Item_36_Establishment_of_a_Sustainable_Energy_Financing_District.pdf>.

[4] Berkeley's Sustainable Energy Financing Project. Renewable and Appropriate Energy Laboratory, University of California at Berkeley. Oct 7, 2008. <http://rael.berkeley.edu/berkeleyfirst>.

[5] City of Berkeley. City Council Ordinance. *Establishment of a Sustainable Energy Financing District*. July 22, 2008. <http://www.ci.berkeley.ca.us/uploadedFiles/Planning_and_Development/Level_3_-_Energy_and_Sustainable_Development/2008-07-22_Item_36_Establishment_of_a_Sustainable_Energy_Financing_District.pdf>.

taking out an equity line of credit this financing program does not rely on, or draw down, a property owner's available credit line.

While the property owner occupies the house she will enjoy decreased utility bills, and when the home is sold the resale value of the home should increase with the desirable amenity of the solar system. Finally, and for the first time in a financing plan, the original property owner is not under a long-term obligation for the remaining value of the solar energy system. Instead, the solar property tax assessment transfers to the new home owners when the property is sold. Given that the average American lives in his home for nine years, the transferability of financial obligation is crucial.

For cities, the benefits are also clear. First, and perhaps most importantly in these volatile economic times, the Berkeley FIRST model poses little to no liability or exposure to a city's general fund. Thus, a city can implement a solar financing program with almost zero budget impact that can dramatically help the city meet its clean energy or climate change goals and lower residents' utility bills. Plus the FIRST design drives local economic development by ensuring that local solar installers and renewable energy companies are integral partners in the program. Finally, this type of property-tax assessment financing structure is well known to local governments, and is considered an easy and trusted way to finance projects.

Notes of Caution

While the Berkeley FIRST model has clear benefits and is an exciting development in the world of solar financing, there are a few points of caution. Local solar installers and solar advocates in Berkeley worried that early press surrounding this new finance model could cause a notable disruption in solar sales if customers decided to wait to install solar until the program was operational. Cities planning to replicate the Berkeley FIRST model should be cognizant of the potential market effect of announcing the program far in advance of the start date. Also it should be noted that it is unclear whether property owners who participate in the program will also be able to claim the solar investment tax credit (ITC). Currently a home owner who install solar is allowed to claim a 30 percent credit on her federal tax returns. The City of Berkeley, and other solar advocates, are requesting clarification from Internal Revenue Service (IRS) on the matter. While this may turn out to be a non-issue, jurisdictions should be aware that currently there is no clarity on how the solar ITC will interact with the property tax assessment.

Spotlight: California

Chartered cities in California have the independent authority to create their own local Special Improvement Districts. In the summer of 2008, the state legislature passed a new statewide law (AB811) that clarifies the authority for non-chartered California cities to create FIRST-style districts under a land secured financing code. Today any county, city, special district, school district or joint powers authority in the state can establish a Contract Assessment District (also called the '15 Act) which allows for financing of public improvements and services. *Citation: 1 - Assembly Bill 811. Levine, Lloyd. Contractual assessments: energy efficiency Improvements. California Streets and Highways Code. California Legislation 2008.*

Policy Primer

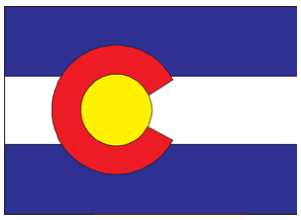
Adopting the FIRST Model

The Berkeley FIRST program has made headlines across the nation[6]. City managers, mayors, state legislators, and governors from Washington to Missouri have taken notice of this innovative financing scheme. Many recognize that the FIRST model offers a solar solution to cities seeking to reach their climate change and economic development goals. With a few changes to state law, the FIRST model can be adopted by any city around the nation. At the request of Vote Solar, summer associates at the law firm of Wilson, Sonsini, Goodrich and Rosati researched state policy changes needed to authorize a similar program in 15 states. This legal memo can be found online at www.votesolar.org/resfinance. States reviewed include: Arizona, Colorado, District of Columbia, Florida, Hawaii, Massachusetts, Michigan, Nevada, New Jersey, New Mexico, New York, Oregon, Texas, and Washington. While unique legislative amendments may be necessary for each state, five key policy elements form a framework for enabling the adoption of the FIRST model.

Policy Component #1: Identify existing assessment district authority within state statute.

Research into the state laws and code can determine whether existing special improvement district authority exists within state code. If a special improvement district authority exists, generally that statute can be broadened through an amendment to authorize additional FIRST-style financing.

The authorization for special improvement districts was already established in the majority of the states researched by our legal team. However, if no such authority exists, or if existing structures lack the flexibility to serve the FIRST model, then new legislation would need to be introduced and passed to create such property tax assessment authority. Looking at Colorado's new 2008 law 'the Facilitation of the Financing of Renewable Energy Act, HR 1350, may provide useful sample legislation for states seeking to create authority for sustainability districts.[7]



Spotlight: Colorado

The state of Colorado passed a bill in May of 2008 creating the first-in-the-nation statewide financing program to loan homeowners the money they need for renewable energy and energy-efficient home improvements repayable through property taxes. (HR08-1350).*Citation: Colorado State Code § HB08 (1350). <http://www.leg.state.co.us/clics/clics2008a/csl.nsf/fsbillcont/E62A0C34C01772C9872573D000830B58?Open&file=1350_enr.pdf>*

Policy Component #2: Establish the mechanism for creation of sustainable energy financing districts authority.

The state-authorizing statute specifies the district establishment mechanism for a city. This process can be simple or cumbersome. In some jurisdictions the local city council or county board of supervisors can pass a city ordinance creating such districts by a simple majority vote,

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Times. *Berkeley Approves City-Backed Loans for Solar Panels*. September

(1350). "Concerning the Facilitation of Financing of Renewable Energy."

s/clics2008a/csl.nsf/fsbillcont/E62A0C34C01772C9872573D000830B58?

though a public hearing is often required. However, some states require a district petition, or a referendum, with 51 percent of property owners inside the district giving approval. A referendum of voters can add cost and time to district establishment.

Policy Component #3: Define solar energy and energy efficiency as a public benefit.
Special improvement districts as a rule do not reference renewable energy, specifically solar, and energy efficiency, as public benefits. The public benefits of renewable energy generation such as clean air, combating global warming, local job creation, and energy security are well documented. Specific language needs to be added to the district authorizing statue that specifies what type of projects can be financed under a sustainability district.

Policy Component #4: Create Opt-In Assessment Feature
Along with specific definitions, the *District* authority must also include an opt-in feature for voluntary district enrollment that allows for the individual assessment of taxes for participating property owners. This 'opt-in' feature is a less common feature among traditional improvement districts. *Districts* usually only authorize improvements that result in shared benefit among all property owners within that contiguous geographic area. Thus, usually all property owners within the district are taxed equally to cover the cost of the improvements. However, under the FIRST model, only certain property owners are taxed. One way to establish a district where only self-selected property owners are taxed is to create a district with a non-contiguous boundary.

Policy Component #5: Authority to Issue Bonds.
Cities interested in establishing the FIRST model must have the state authority to issue and sell bonds--typically general, municipal, or revenue bonds--to pay out the capital costs of the renewable energy and energy efficiency projects. Certain state statutes only authorize revenue bonds. In those states an amendment would need to be added to the law to recognize the FIRST loan payments as 'revenue.' For general obligation bonds, the assessed properties would serve as the security. Palm Desert, a city in Southern California has enacted a FIRST-style district but has chosen to fund the start of their program through a $2.5 million loan from the city's general fund. This option may not be a viable option for most cities or counties.

District Implementation and Administration

Upon successful passage of amendments to state legislation, a city should be able to consider the creation of a FIRST-style program. Under state authority, the city enacts local ordinances to create the needed district. City managers and finance departments generally have experience managing improvement projects and structuring tax assessments to best serve city residents. However, cities may find the review of applications and the on-going small accumulation of capital costs cumbersome and costly to administer. Additionally, a city will need to seek out a financier of the municipal bonds who recognizes the security and value of solar property installations.

The city of Berkeley decided they needed to find a financing entity that had the capability to provide a user-friendly interface for applicants, provide efficient applicant screening as

well as access capital to pay projects costs on a fast turn-around. A new company, Renewable Funding, was created to fill this niche. Renewable Funding was founded by one of the Berkeley FIRST's architects specifically for the purpose of offering turn-key administration of FIRST programs in Berkeley and elsewhere.[8] The company has developed on-line application and administration tools in addition to a full set of financial services to support the FIRST program. Renewable Funding also serves (or 'can serve'?) as general bond aggregator, allowing the city to purchase small bonds to quickly issue payment for projects. These small bonds will then be aggregated and sold to more traditional buyers of large municipal bonds. Berkeley adopted a contract with Renewable Funding LLC to administer the program at a City Council meeting on September 23, 2008. A city can, of course, choose to administer the program internally.

Conclusion

The Berkeley FIRST financing model has the potential to increase rooftop solar installations in cities across the U.S. While larger commercial solar energy projects are booming, small residential solar system installations have lagged behind. Commercial installations have captured almost three-quarters of total installed solar capacity nationwide[9]. This trend is explained in large part by favorable federal tax credits for commercial systems, as well as the 'power purchase agreement' (PPA) third party financing that has been available—up to this point—only to larger commercial systems.[10] In 2008, the clear majority of new commercial installations will be third-party managed, accounting for 65-75 percent of the market. By 2009, it is expected that 90 percent of commercial projects will be financed this way.[11] With the FIRST model offering a comparable financing structure for residential and small commercial properties, it is reasonable to assume that we would see similar growth rates in the residential solar sector.

The FIRST model is not the only loan or financing option[12] municipalities and state governments can offer. However, it does address some issues—a cumbersome application processes, lower commercially-available interest rates, and lack of consumer awareness—that have led to low enrollment rates in some previous programs.[13] Berkeley

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[8] Renewable Funding – CityFIRST. Renewable Funding LLC. 7 Oct. 2008. <http://www.renewfund.com>.

[9] Sherwood, Larry. "US Solar Market Trends 2007." August 2008. IREC. <http://www.irecusa.org/fileadmin/user_upload/NationalOutreachPubs/IREC%20Solar%20Market%20Trends%20August%202008_2.pdf>.

[10] Guice, John and John D.H. King. "Solar Power Services: How PPAs are Changing the PV Value Chain." February 14, 2008. GreenTech Media. <http://www.greentechmedia.com/reports/research-report-solar-power-services.html>.

[11] Guice, John and John D.H. King. "Solar Power Services: How PPAs are Changing the PV Value Chain." February 14, 2008. GreenTech Media. <http://www.greentechmedia.com/reports/research-report-solar-power-services.html>.

[12] Nimmons, John and Mike Taylor. "Utility Solar Business Models: Emerging Utility Strategies & Innovation." Solar Electric Power Association. Report # 03. pp. 36-41. May 8, 2008. <http://www.solarelectricpower.org/docs/Utility%20Business%20Model%20FINAL%206_03_8.pdf>.

[13] Bolinger, Mark and Kevin Porter. "Renewable Energy Loan Programs 2003." September 2002. Lawrence Berkeley Lab. < http://eetd.lbl.gov/ea/ems/cases/RE_Loan_Programs.pdf>.

uses a simple, on-line, real time application process provided by a third party administrator, and in this time of credit crunch, the program's ability to offer residents a fixed low interest rate for 20 years is quite important.

The Berkeley FIRST model is a promising policy tool to drive growth in residential rooftop solar installations. We believe this innovation may do much to help bring clean, distributed solar power to the mainstream.